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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/762,513	07/24/2001	Harald Bonsel	1998/F-751	4848
23416	7590	01/12/2004	EXAMINER	
CONNOLLY BOVE LODGE & HUTZ, LLP			WINTER, GENTLE E	
P O BOX 2207			ART UNIT	PAPER NUMBER
WILMINGTON, DE 19899			1746	

DATE MAILED: 01/12/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/762,513

Applicant(s)

BONSEL, HARALD

Examiner

Gentle E. Winter

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-5 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-5 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on ____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. §§ 119 and 120

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. ____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
* See the attached detailed Office action for a list of the certified copies not received.
- 13) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application) since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.
a) ☐ The translation of the foreign language provisional application has been received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121 since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) ____.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). ____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: ____.

DETAILED ACTION

Claim Rejections - 35 USC § 112—Withdrawn

The amendments/clarifications have obviated the 35 U.S.C. §112 rejection(s). The rejections are withdrawn

Response to Arguments

Applicant remarked that the present invention as recited in the claims:

[the present invention] is significantly different from the disclosure of the '593 reference in at least three distinct areas. First, the gasket material or seals of the present invention stops with the membrane whereas the gasket material of the '593 reference surrounds the membrane.

Claims 1, 3, and 4 do not disclose a gasket material or a seal. Therefore, the argument is not properly directed to claims 1, 3, and 4. Claims 2 and 5 disclose a seal, but make no reference to where the seal stops. The reference to the "seals are arranged between the membrane and the terminal plates" does not distinguish over the '593 reference, because the terminal plates require that everything be between the plates. Claim 5 further limits claim 2 and discloses "a reservoir between the seals and the membrane." Page 3 discloses "sealed by employing packing 6, 7, 8 between a pair of bipolar plates." As such, claim 5 is here rejected.

Second, Applicant remarked:

Moreover, the polymer electrolyte membrane (PEM) is not divided by a layer forming a water supply path as shown in Figure 2, reference numeral 1 of the '593 reference.

The open claim language allows for the possibility of an opening, even if the same is not disclosed.

Third, applicant remarked:

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Additionally, the present invention includes two reservoirs on both sides (electrode and anode). The Examiner's attention is also directed to the present specification, page 5 which describes the reservoirs of water 14 formed between the seals 5, 6 and the membrane 2. The advantages of the reservoir of water are discussed in detail. Meacher does not cure the deficiencies of the '569 reference as described above.

The claims as currently drafted do not disclose two reservoirs. It is generally improper to read limitations from the specification into the claims. See *In re Priest*, 582 F.2d 33, 37, 199 USPQ 11, 15 (CCPA 1978).

Further Applicant remarked:

claim 4 does not simply define stacks per se, but instead claim 4 defines stacks that comprise the novel and unique fuel cell structure of claim 1.

The independent claim remains rejected and as such, the arguments have been addressed with in the discussion of claim 1.

Finally, Applicant remarked:

European patent application 0 589 850 A1 shows the typical assembly of bipolar plates 9, electrodes 2, 5 and membrane 4. This reference is silent and does not suggest reservoirs in the non-active area allowing for storage of the formed water for humidification purposes.

As indicated above the reference need not disclose a reservoir, as no reservoir is claimed in claims 1-4. Claim 5 does not disclose a plurality of reservoirs. Element 9 and 9' of the '593 reference are construed as reservoirs.

Claim Rejections - 35 USC § 102—Maintained

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

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(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

2. Claims 1-3 and 5 are rejected under 35 U.S.C. 102(b) as being anticipated by European Patent Application 0 499 593 A1, (hereinafter '593). Claim 1 is drawn to a PEM fuel cell which comprises at least two terminal plates (5 and 5') which clamp in a membrane (2) which, apart from the outermost edge, is covered on both side by an electrode layer, the covering of the membrane with at least one electrode (3 and 4) layer projecting into the structural edge region of the fuel cell. The same is identically disclosed in figures 1 and 2 and relevant associated text of the '593 reference. The product water in the structural edge region (reservoir) of the fuel cell is utilized to wet the membrane. See e.g. page 3 line 27 *et seq.* The edge region seals are between the terminal plates, see element 7 of figure 2. The seals (7) define the reservoirs (9, 9') figure 2.

3. Claims 1 and 2 are rejected under 35 U.S.C. 102(b) as being anticipated by European Patent Application 0 589 850 A1 (hereinafter '850). The '850 reference of figure 3 and relevant associated text discloses two terminal plates (tightening plate) which clamp in a membrane (4) which, apart from the outermost edge, is covered on both side by an electrode layer, the covering of the membrane with at least one electrode (3 and 5) layer projecting into the structural edge region of the fuel cell. The same is identically disclosed in figures 2 and 3 and relevant associated text of the '850 reference, and edge region seal (12) are arranged between the membrane and the frame.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

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(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

1. Claim 4 is rejected under 35 U.S.C. 103(a) as being unpatentable over, in the alternative ‘593 or ‘850 and United States Patent No. 5,858,569 to Meacher et al.

2. Each and every limitation of claim 4 is disclosed in every one of the above references, as set forth above, except that each reference apparently fails to explicitly disclose the indicated stack design. It is noted that the general concept of stacking cells is well known in the art and believed to be inherent in the references. Nonetheless, to be rigorous Meacher is provided for the missing element and the motivation for making the combination.

3. Meacher discloses that most fuel cells produce “voltage in the range of 0.4 to 0.8 volts. Practical applications require that multiple cells be assembled to be in series electrically, enabling the delivery of current at voltages from 6 to 120 volts. Such assemblies are referred to as "stacks" and the cells are sequentially physically stacked and clamped together.” The artisan seeking a power supply between 6 and 120 volts would have been motivated to operatively interconnect a plurality of fuel cells.

Conclusion

4. This examiner notes that the claims appear to share many features with the prior art of record. Applicant is encouraged to contact this examiner if applicant feels that doing so would assist in the identification of patentable subject matter.

5. This examiner substantively concurs with the opinion of the International Searching Authority, a copy of which is in the file. As the search report indicated the prior art of record is

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replete with anticipatory references for claims 1-3. The references are not explicitly repeated here because doing so would do little to advance prosecution or clarify issues. Suffice it to say that the references are substantially cumulative with those cited herein.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Gentle E. Winter whose telephone number is (703) 305-3403. The examiner can normally be reached on Monday-Friday 7:00-3:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Randy P. Gulakowski can be reached on (703) 308-4333. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 872-9310 for regular communications and (703) 872-9311 for After Final communications. The direct fax number for this examiner is (703) 746-7746.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0661.

Gentle E. Winter
Examiner
Art Unit 1746

Zeinab Elarini

January 3, 2004

**ZEINAB EL-ARINI
PRIMARY EXAMINER**